

## Skeena - Queen Charlotte Regional District

### *Queen Charlotte Islands/Haida Gwaii*



## SOLID WASTE MANAGEMENT

### 2007 SYSTEM REVIEW

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# 1.0 Introduction

The Queen Charlotte Islands are treasured by British Columbians and the world for their cultural heritage, natural beauty and unique ecology. While not explicitly stated or perhaps understood, sustaining these social and natural elements and the way of life enjoyed by the roughly 5000 residents is the overarching goal of the Islands Waste Management Plan adopted in 1994.

The purpose of this Review is to assess how well the existing system is meeting sustainability objectives and to identify changes to existing programs and policies that will improve the overall efficiency and performance of the system.

This report will describe the existing system, explore key issues in need of correction, propose a zero waste vision, and present recommendations for implementation over the next five years.

## KEY CONCEPT

**Integrated Solid Waste Management System:** a set of policies, programs and infrastructure designed to interact with each other for the purpose of reducing the amount of waste generated, maximizing recovery of discarded resources, and safely disposing of resources not recycled by a defined population in a defined geographic region.

Ideally, the Solid Waste Management system will be efficient, and resilient, able to withstand fluctuations in the market economy and adapt to changing populations and shifting responsibilities between and amongst private and public sectors. It will complement and be strengthened by other management and long-range plans, especially economic development, land use planning, public and environmental health, and education.

A well functioning solid waste management system is an indicator of overall community sustainability and works in harmony with natural systems to the greatest extent possible.

## 2.0 Background

The existing system was developed through the Regional Solid Waste Management Plan (the Plan) and is enabled through Bylaw No.276. The key goal of the Plan is to enable Islanders to “manage their solid waste in a way that will have a minimal impact on the environment”. The administration goal of the Plan is “to ensure that responsibility for solid waste on the Islands is assumed by Islands residents”. Bylaw 265 established the Islands Solid Waste Management Committee to administer and implement the Queen Charlotte Island portion of the Plan.

The current plan for the Skeena-Queen Charlotte Regional District (SQCRD) was finalized and approved by the Ministry of Environment in 1994. Generally, residential waste and recyclables are handled by the SQCRD through contractors, with billing services provided by municipalities except for rural area residents. Commercial and construction type waste and recyclables are handled privately with the notable exception of light commercial waste pickup which is regulated under the bylaw. Lastly, the Skidegate and Old Massett Bands provide their own garbage collection service and pay a fee to the SQCRD for use of disposal and recycling facilities. While the Plan has not been revised since adoption in 1994, it is a well-thought out document based on extensive community consultation and presents a clear set of management objectives and strategies.

### **Community characteristics**

The population on the islands hovers around 5000 for both the 2001 and 2006 Census, with over half of the islands residents belonging to the Haida Nation. Table 1 presents a chart of the major communities and population distribution. Fluctuations in population and community character have been few, with the notable exception of Masset related to the establishment of the Canadian Forces Base in 1971 and subsequent downsizing in 1997.

A seasonal population is estimated at 25% or roughly 1250 (anecdotal only). The 2006 tourism report Destination Haida Gwaii estimated that in 2002 a total of 52,500 visitors arrived by ferry and plane. Visitors are concentrated in summer months, with the Qay'Il'nagaay Heritage Centre and Haida Gwaii Museum in Skidegate, Naikoon Provincial Park, and Gwaii Haanas National Park being major attractions.

Haida Gwaii stretches 300 km north-to-south with a total land mass of 10 180 km<sup>2</sup> (3,932 sq mi) and consists of two main islands (Graham and Moresby Islands) and more than 350 smaller islands.

**Table 1:** Population of Haida Gwaii/Queen Charlotte Islands

<b>Location</b>	<b>Population</b>
Masset	940
Old Massett	<b>841* (694)</b>
Port Clements	440
Queen Charlotte	948
Skidegate	<b>885* (781)</b>
Electoral Area D	607
Electoral Area E	402
<b>Total Island</b>	<b>5063</b>

Sources: Statistics Canada, 2006 Census; SNDS Labour Market Census, 2006

Note: \* source for these figures is Skeena Native Development Society, Labour Market Census, 2006

Numbers in parentheses are data from Statistics Canada, 2006 Census

## Community Goals

Harmonizing strategies of multiple strategic plans is a simpler task when there is an overarching vision. When the Plan was adopted in 1994, it stood alone as a planning effort. In the last two years however, the following documents have either been published or are in the process of being finalized:

- Haida Gwaii Strategic Land Use Agreement (September 2007)
- Haida Gwaii Community Electricity Plan, Sheltair Group commissioned by Council of the Haida Nation (in progress)
- Draft Community Viability Strategy and Action Plan for Haida Gwaii/Queen Charlotte Islands (2007)
- Haida Gwaii/Queen Charlotte Islands Land Use Plan Socio-Economic Base Case (March 2004)
- Destination Haida Gwaii, Upper Management Consulting, March 2006

These documents should be considered when developing a new Islands Waste Management Plan in the context of partnerships and compatibility.

## 3.0 Approach

An adaptive management strategy was employed for this project, allowing the consultant to collect and analyze information while implementing “quick fixes” for urgent issues including the December 31, 2007 expiry date of garbage collection contracts and a need for an updated newsletter on garbage collection and recycling programs.

Since the need for a major Plan review and amendment was evident, the scope of the original project was stretched as far as timing and budget would allow to facilitate this next exercise. Based on this need, the consultant generally followed the FCM Sustainable Communities Waste to Resource approach to developing a waste management strategy, taking time to consult extensively with municipalities, contractors, ISWAC, and SQCRD staff.

Table 2 summarizes tasks and their status of completion, with tasks being taken from the original and modified project scope.

**Table 2: Project Scope and Status**

TASK	STATUS
Prepare and implement public consultation and communications strategy.	Completed - see Appendices.
Review existing bylaws, provide assessment and draft new bylaw.	Assessment completed and included in this report. Draft bylaw can be prepared when administration confirms changes.
Review garbage collection contracts and service agreements.	Completed and included in this report.
Review public education materials and website and recommend changes.	Completed - see recommendations in this report.
Review terms of reference for ISWAC and provide recommendations.	Completed - see recommendations in this report.
Provide waste characterization and system overview.	Completed and included in this report.
Provide financial review of the waste management system.	Brief assessment completed and included in this report.

TASK	STATUS
Conduct field studies of facilities to review existing practices and their ability to meet community needs and Plan objectives.	Completed and included in this report and previously submitted reports.
Develop options for administering landfill function.	Options identified and included in this report. Detailed evaluation beyond the scope of this study.
Develop a customer relations program and service evaluation procedures .	Initiated as part of the garbage collection service meetings with contractors and municipalities in January.

**Reporting**

This review is compiled based on the following information:

- Landfill volume reports compiled by landfill staff
- Landfill closure and operating plan reports compiled by Sperling-Hansen
- Recycling volume reports compiled by the SQCRD Superintendent of Waste Management
- Garbage tag sales reports compiled by landfill staff and the consultant
- Feedback on system performance by ISWAC, contractors, municipalities, bands, elected officials and staff
- Interviews with Product Stewards and their annual reports
- Statistics provided by Census Canada and the Federation of Canadian Municipalities

A complete accounting of all materials in terms of volumes, origins and destinations (also known as MSW Tracking) helps us to understand what is working and what is not working in the current system. This type of inventory, often used to evaluate the success of diversion programs, is rarely completed by Regional Districts in general due to a variety of reasons such as:

- Absence of reporting from privately owned and operated facilities (some of which are permitted by the Ministry of Environment)
- Absence of co-ordinated efforts with private sector for effective movement and management of materials
- Variations or absence of standardized and detailed accounting methods by both local government and privately operated facilities



- Lack of weigh scales at facilities
- Illegal or inappropriate dumping in undeveloped or green spaces (includes Crown land)
- The burning of landclearing debris (often done under permit by MOE)
- Backyard burning
- Burning of MSW in residential wood burning appliances

Through this review it became apparent that the SQCRD faces similar challenges. Many improvements can be made with the co-operation of industry, the Ministry of Environment, and private operators and these can be explored at a later date and in partnership with other Regional Districts.

## 4.0 Waste Characterization

Since a waste characterization study has not been done for the Islands, the consultant has adapted numbers from the 2006 waste composition study for the Salmon Arm landfill.

Waste compositions are affected by:

- waste available to generate i.e. consumer goods/products and organics
- diversion programs available i.e. recycling and product stewardship
- economic incentives to reduce, reuse, recycle i.e. User-pay or volume-based fees for disposal
- convenience of disposal versus diversion i.e. curbside pick up versus drop-off
- public education programs
- cultural habits and values i.e. conservation ethic
- geography i.e. climate, landscape
- seasonal variations i.e. population shifts in numbers, activities and consumption pattern

Since Salmon Arm accepts more items for recycling, more private depots are available, and more education is provided, Islands numbers for glass and paper have been increased. On the other side, less organic material is likely to be found in Islands garbage due to different landscaping choices and the rainforest geography which encourages home composting so the Salmon Arm number was decreased. Finally, the hazardous waste component in the Islands landfill was

increased by 1% to account for reduced education and more limited access to alternatives.

Table 3 presents a waste composition for Salmon Arm and the Islands landfill with approximate volumes for the Islands. The volume estimates are based on a per capita waste generation rate of 0.68 metric tonnes (MT) per person<sup>1</sup>, using 5000 as the population number to simplify calculations. The additional stress placed on the waste management system by seasonal residents and visitors must also be factored into waste generation rates and carried over into the specifications for the waste management system upgrade. An adjustment factor of 10% increase has been calculated for this additional source of waste generation.<sup>2</sup>

These numbers tell a story about how much material is available for recovery and can be used to assess capacity needs for recovery systems as well as prioritize policies and programs by material type. For example, paper products and organics are the largest components of the Islands waste stream. New programs focusing on these two material types have the potential to reduce waste to landfill by 45%.

The most recent confirmed annual volume of waste to the Islands landfill is for 2002<sup>3</sup>, at 17,681 cubic metres (see Table 4). Converted to tonnages, the total amount of material landfilled in 2002 is equal to 6237<sup>4</sup> tonnes - significantly higher than the estimates in Table 3. This tonnage equates to **1.25 tonnes for every permanent resident per year - almost twice the provincial average.** From this data, we can determine where the distribution of material sources by community and by month of the year. The average volume of waste received at the landfill per month is 1488 m<sup>3</sup>. There is a slight increase during summer months, most notable from the Skidegate and Masset transfer stations and commercial deliveries by Big Red.

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<sup>1</sup> 0.68 is the 2000 BC provincial average per capita waste generation rate.

<sup>2</sup> The 10% factor is a rough estimate based on: 1. A 25% seasonal population for 25% of the year, representing an 8% increase; and 2. An estimated 10% increase based on 52,500 visitors per year (assuming an average stay of 4 days or 1% of the year). This 18% is further adjusted to consider that waste from this source is accounted for in the commercial waste stream, which is incorporated into the per capita generation rate of 0.68 tonnes per year. However, given the unreliable and inconsistent nature of data tracking outside of recycling volumes, it is better to take a precautionary approach and allow for a 10% margin of error.

<sup>3</sup> 2002 is also the baseline year used by Environment Canada for greenhouse gas emissions tracking.

<sup>4</sup> Calculated by multiplying the m<sup>3</sup>/year by a factor of 0.3491. This factor is used by the BC Ministry of Environment and is taken from the Waste Management Permit Fees System Procedure Manual.

**Table 3: Waste characterization and volume estimates for QCI**

Material type	SALMON ARM	ISLANDS LANDFILL	ISLANDS VOLUMES MT	10% adjust-ment.
paper	22	25	850	935
glass	3	6	204	224
ferrous	3	3	102	112
non-ferrous	1	1	34	37
plastics	16	16	340	374
organic	30	20	680	748
wood and products	2	4	136	150
C&D	7	7	238	262
Rubber	2	2	68	75
Textiles	6	7	238	262
Composites	8	8	272	299
HHW	1	1	34	37
Other	0	0	0	0
total	100	100	3,400	3,740

**Table 4: Volumes to Landfill in 2002 by Source and Month (cubic metres M3)**

	Total	Sandspit	Skidegate	Landfill	Masset	Big Red	Rias Dev	Other
January	1684	75	581	38	103	113	670	104
February	1238	75	563	19	338	111	128	4
March	1241	103	497	28	375	110	98	30
April	1391	56	638	47	394	94	137	25
May	1776	113	750	113	506	120	80	94
June	1479	75	684	66	478	113	45	18
July	1638	66	722	38	497	139	110	66
August	1663	75	647	169	516	114	94	48
September	1337	75	581	169	366	116	30	0
October	1538	75	628	56	422	113	154	90
November	1281	75	506	150	375	59	23	93
December	1596	75	632	150	431	46	228	34
TOTAL	17861	938	7429	1043	4801	1247	1797	606
Averages	1488	78	619	87	400	104	150	51

## 5.0 Overview of the Islands Waste Management System

### Key features and gaps of SQCRD system

The SQCRD currently manages the Islands waste management system which is comprised of:

- three transfer stations with refuse drop-off and limited recycling located in Sandspit, Skidegate, and Masset
- a regional islands landfill located near Port Clements
- mandatory weekly garbage collection (2 can limit with \$2 tags)
- hauling from transfer stations to landfill
- a satellite recycling depot at the landfill and in the Village of Queen Charlotte
- shipping of recyclables to Prince Rupert recycling depot
- satellite recycling bins in all communities (see Table 6)
- backyard composter distribution (done once about 10 years ago)
- public education program (very limited, no major effort for several years)
- a surcharge on waste loads containing unwaxed cardboard (not enforced; no other policies to limit recyclable materials in waste loads).

Figure 1 provides a summary of what can be recycled by location and Appendix B provides data on volumes collected for recycling between 1996 and 2007.

### Key features and gaps of EPR system

Implementation of Product Stewardship Plans under the BC Recycling Regulation has been problematic on the Islands, largely due to the high costs of servicing a remote location and limited partnership opportunities for siting depots. As of February 2008, EPR programs are operating as follows:

- Encorp bottle depots in the Villages of Queen Charlotte and Masset
- ProductCare depot at Islands Landfill
- Used Oil, oil filter and container collection at Islands Landfill and used oil collection at TLC Automotive in Masset
- All pharmacies accept unused or expired medications
- Tires collected at SQCRD facilities but not considered an EPR partnership
- No electronics recycling on Islands - Prince Rupert closest location

- SQCRD is a an active member of the Recycling Council of BC and the BC Product Stewardship Council, both organizations advocating for the effective implementation of EPR programs across the province.

The need to dovetail Product Stewardship Plans with Solid Waste Management Plans has been identified as critical for a smooth transition to 100% EPR, an integral part of community sustainability. A co-operative approach to implementation and evaluation for this transition period of 2004 to 2020 is needed to achieve a balanced outcome that favours social, environmental and economic benefits for all stakeholders. A blueprint for local governments transitioning to full product stewardship is currently being reviewed by both organizations and industry stewards and will provide the Islands with both tools and a strategy for improving access to EPR programs. Appendix E contains a summary of actions that local governments can take now and a status report on actions taken by SQCRD to date.

#### **KEY CONCEPT**

**Product Stewardship or Extended Producer Responsibility (EPR)**, is defined as "a management system based on industry and consumers taking life-cycle responsibility for the products they produce and use".

The BC Ministry of Environment's Product Stewardship policy is that producers and consumers assume the cost of industry product stewardship programs not general taxpayers or local government. The BC Recycling Regulation (2004) currently mandates EPR programs for: Beverage Containers; Lubrication Oil, Oil Filters and Oil Containers; Pharmaceutical Products; Paint; Solvents, Flammable Liquids, Pesticides and Gasoline; Tires; Electronics (TVs, Computers and accessories, Printers, and Monitors); and Lead Acid Batteries.

The BC Ministry of Environment has committed to introducing two new products every three years, and 2008 is a year for new programs. For more information, visit: <http://www.env.gov.bc.ca/epd/epdpa/ips/>

## 6.0 A Detailed Look at Waste Collection and Disposal

Since 1994, weekly curbside garbage collection service has been offered to almost everyone on island. For a basic fee of \$17 per month (down from \$20 in 1994), Regional District customers are allowed two containers of garbage per week, although enforcement is inconsistent. Extra containers of garbage may legally be put out by purchasing \$2 garbage tags and attaching one to each additional container.

This mandatory service was introduced to discourage illegal dumping and burning of garbage while the limits are meant to encourage residents to reduce, reuse and recycle what they can. The monthly fee also allows the significant number of seasonal residents to start and stop garbage collection services to match their time on the islands. No additional administrative fee is currently charged for seasonal residents availing themselves of this option.

In 2007, SQCRD provided contracted service to approximately 1474 homes in both the municipalities and rural areas. Service for homes within the two Indian Reserves, Skidegate and Old Massett, is provided by the Bands, who each have their own collection system but use SQCRD disposal and recycling facilities under agreement. Garbage collection on reserves is not based on Plan objectives or associated bylaws, and weekly limits are not in effect. Total waste disposed at the landfill is presented in Table 4. All residents also have the option of self-hauling to the transfer stations and the regional landfill.

**Table 5: Units receiving garbage collection service**

ROUTE	NO. OF UNITS
Moresby Island to Skidegate	230
QC City/Skidegate Landing	530
Chinukundi Creek, Tlell, Port Clements to Nadu Road	364
Village of Masset, Graham Is. N., Tow hill, south to Pure Lake	560
Total	1474

The numbers in Table 5 are based on a count of residential and commercial units completed for the 2004 collection tender and do not account for seasonal variations or the actual number of dwellings billed by SQCRD or the municipalities. Appendix provides a summary of all commercial businesses for the islands based on telephone directory listings.

A detailed treatment of the garbage collection component of the solid waste system is provided in a previously submitted report based on meetings held with contractors and municipalities in January 2008. The Bylaw review section of this report also provides further insight into the workings of collection service.

## 7.0 A Detailed Look at Recycling

The current recycling system consists of a set of recycling bins in each community (Table 6) and a recycling depot in the Village of Queen Charlotte and at the Islands Landfill. Bulky items for recycling are also collected at the two transfer stations. Figure 2 provides a listing of materials accepted at each of these locations.

It is estimated that 80% of recycling volumes are currently generated from the Village of Queen Charlotte, a very interesting statistic since the populations of Massett and Skidegate are very similar (Table 1). Lower participation in Skidegate could be related to garbage collection policies (i.e. twice per week collection with no limits) and for both communities much smaller and lower profile recycling bins. The residents of the Village of Queen Charlotte have been characterized as more environmentally aware which may be a contributing factor, but most likely the greater volumes arise from the greater number of commercial businesses here.

**Table 6: Location of community recycling bins**

Sandspit	Shopping centre parking lot
Queen Charlotte	Attached to Village office
Skidegate	Beside medical offices
Tlell	Beside Anne's Barn O' Plenty - grocery store
Port Clements	Across from Village office
Islands Landfill & Recycling Depot	Dedicated bins
Masset	Beside Village office
Old Masset	Across from daycare centre



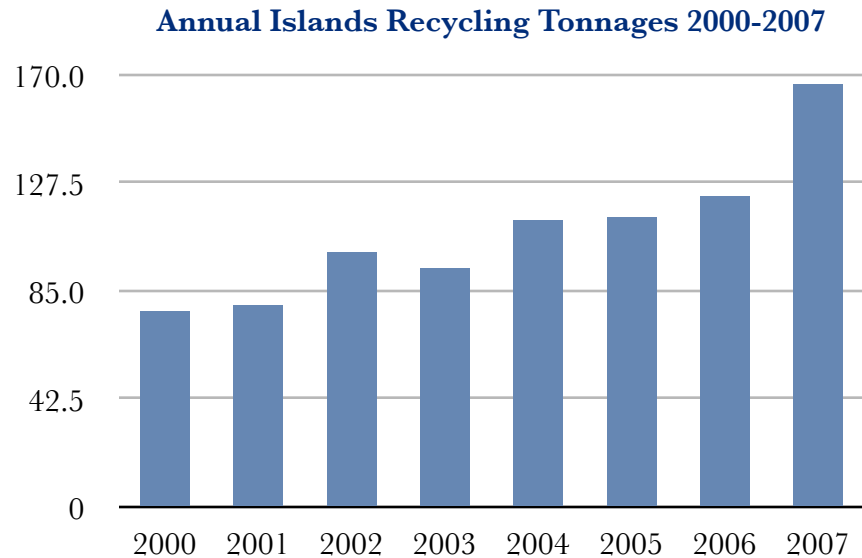
**Figure 1: Materials accepted for recycling.**



Figure 2 shows an overall trend of increasing participation rates since 2000 and community consultations for this review revealed a strong demand for improved access to recycling services, better facilities, and expansion of what can be recycled has also been increasing over the past few years. Appendix B includes data on volumes recycled by commodity type.

In general, the demand has outgrown the current recycling system and there are collection and processing inefficiencies which may help increase capacity if corrected, however EPR and curbside service are recommended to achieve necessary diversion rates. The Recommendations section of this report suggests additional program modifications.

Figure 2: Total Recycling Weights 2000-2007



**Includes all paper products, plastic tin cans, phone books, small metals (does not include scrap metal barges), paint and batteries.**

## 8.0 The Landfill Administration Question

As part of the system review, the consultant was asked to consider future options for landfill administration. These options currently include:

1. Status quo - SQCRD continues to administer.
2. Contract out through an RFP process.
3. Transfer responsibility to the Village of Port Clements (who in turn may choose to contract out)

The question of administration options arises from the SQCRD's desire to run all functions as efficiently and effectively as possible. There is also an acknowledgement that current landfill operations, as confirmed by community consultations, are not meeting the needs of all stakeholders, including staff, users, and funding partners. Traditionally, the rationale for contracting out government services is primarily cost savings but in many cases, including this one, reasons of

managerial flexibility, service quality, and speedy implementation of new initiatives can take precedence.

In order to make an informed decision, SQCRD will need to analyze or compare costs and other benefits in a valid way such as activity-based costing. By definition, the total costs of contract service provision are calculated by adding together contractor costs, administration costs, and any related conversion costs<sup>5</sup> which would be amortized.

The Regional District of Kitimat-Stikine has been contracting out operations at all five of their landfills since the mid-80s very successfully and has provided sample RFP and contract documents. These landfills serve a range of community sizes and are open between two and five days per week, with at least two days falling on a Saturday, Sunday or Monday. Their hours of operation were selected after completing this three step process:

1. Decide how much you are willing to pay to keep sites open.
2. Decide how many days per week you will be open, and how many hours per day.
3. Consult with communities on specific days and hours for each site, given a maximum number of hours per day and days per week.

Regardless of which option the SQCRD decides to pursue, site improvements and operational changes will be needed. Adjusting operating hours for both the transfer stations and the landfills is a priority need to address community concerns about access. Table 7 presents a new draft operating schedule.

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<sup>5</sup> These are usually associated with personnel-related items (unemployment compensation, severance pay, etc.), material-related costs (transfer of property and equipment), and various other costs (penalty fees related to ending leases, costs associated with unused facilities and equipment).

**Table 7: Draft Hours of Operation for Islands Residual Management Facilities**

(brackets) denote current operating schedule.

Facility	Sun	Mon	Tues	Wed	Thurs	Fri	Sat	Total Hours
Islands Landfill	(closed)	(closed)	10-3 (10-3)	closed (10-3)	10-3 (10-3)	10-3 (10-3)	11-3 (closed)	20 (20)
Masset TS	(closed)	(closed)	(closed)	1-7 (1-5)	(closed)	(closed)	11-3 (11-3)	10 (8)
Skidegate TS	(closed)	3-7 (closed)	(closed)	3-7 (1-5)	(closed)	3-7 (closed)	11-3 (11-3)	12 (8)
Sandspit TS	(closed)	(closed)	(closed)	1-5 (1-5)	(closed)	(closed)	11-3 (11-3)	8 (8)
QCC Recycling	(closed)	(closed)	(closed)	12-5 (10-2)	(closed)	(closed)	12-5 (10-2)	10 (8)

It is beyond the consultant’s scope and ability to conduct a proper analysis of these options, however it may be helpful to discuss this task with Mark Watt, City of Kelowna and MMM Consulting(based in Kelowna). The firm recently completed a cost analysis for in-house versus contracted operation for the City of Kelowna’s biosolids composting program. Mark Watt indicated that this study was a straight forward terms of reference and produced satisfactory results.

Immediate and short-term improvements for landfill operations are detailed in the Recommendations section of this report and are based on community consultations, input from the Ministry of Environment, discussions with Roger Tooms, Public Works Manager for the Regional District of Kitimat-Stikine and the consultant’s professional opinion.

## 9.0 Is ISWAC doing their job?

The Islands Solid Waste Advisory Committee was established through Bylaw 265 in October 1994 for the purpose of administering and implementing the Islands portion of the Plan.

The bylaw calls for nine members as follows: Village of Masset, Village of Port Clements, Area D (two members, north and south), Area E, a local environmental or recycling group, Skidegate and Old Massett. All appointments are for two years expiring in January but may be extended until successors are appointed. A secretary is provided by the Regional District to record minutes and carry out the business of the committee. Monthly meetings are held in at Village of Port Clements office, usually the third Thursday from 7:00 to 9:00 pm.

According to the bylaw, annual reports are to be sent to the SQCRD Administrator in October of each year as follows:

- statistical analysis of the success/failure of the current year's operation
- implementation plan for the coming year
- detailed budget for the coming year.

At this time, monthly reports are submitted on landfill and recycling operations pertaining to general performance with recommendations for increased operational and capital support when needed. The Waste Management Superintendent also submits monthly statistics on recycling volumes and the Administrator provides an annual financial statement and budget for the coming year.

Based on the consultant's observations during four meetings, all committee members are sincere and are doing their best, but are struggling with the burden of their responsibility. The committee is failing to monitor and implement the Plan with the level of diligence needed. No evidence was displayed that an annual workplan is being followed or developed, or that the goals and principles of the Plan are the driving force behind the development of new initiatives. Furthermore, when efforts to correct obvious shortcomings of the system are initiated or identified, barriers to effective and timely resolution seem insurmountable, as seen with the issue of repairing collection bins. Unsatisfactory experiences with communications have also been reported by member municipalities and members of the public.

Capacity building within the committee as well as more resources are needed to increase their level of effectiveness. Suggestions for correcting this situation are presented in the Recommendations section of this report.

### KEY CONCEPT

#### **An Alternative: Community-Based Social Marketing**

Community-based social marketing is an attractive alternative to information intensive campaigns. In contrast to conventional approaches, community-based social marketing has been shown to be very effective at bringing about behavior change. Its effectiveness is due to its pragmatic approach.

This approach involves: identifying barriers to a sustainable behavior, designing a strategy that utilizes behavior change tools, piloting the strategy with a small segment of a community, and finally, evaluating the impact of the program once it has been implemented across a community.

For more information: [www.cbsm.com](http://www.cbsm.com) or [www.toolsofchange.com](http://www.toolsofchange.com)

## 10.0 Where does the money come from?

Currently, through the Islands Solid Waste Management Bylaw No. 276 (consolidated) and Amendment Bylaws No. 468, 435 and 415, volume based tipping fees are collected from service users at all refuse disposal sites (i.e. \$12m<sup>3</sup> for commercial loads, and \$13 for small pick ups). In addition, user fees are collected through agreements with Skidegate and Old Massett Band Councils (see Section 9.0 of this report).

Residential curbside garbage collection is paid through quarterly utility billings at a rate of \$17 per month. Villages bill their residents on behalf of the SQCRD and are paid an administrative fee of \$1 per billing. SQCRD bills rural residents directly. The remaining \$16 covers the contractor's per unit charge (varies, but on average \$7.85) and the remaining sum covers tipping fees and administration costs for the refuse disposal system.

Additional revenues are derived from the sale of recyclables and tax requisition. See Appendix D for 5 year budget detailing revenues and expenses.

A detailed financial audit of the system was not possible as part of this review but is recommended so that user fees can be aligned with existing and projected expenses. In general, revenues are insufficient to meet annual expenditures and much needed upgrades to the system. Significant increases in tax requisitions and user fees will be needed to bring the system up to an acceptable operating standard, including ensure an adequate landfill closure fund to cover costs associated with each the closure of each phase, beginning in 2009. At present the currently closure fund requirement is projected to be \$1.6 million by 2044- current reserves are sitting at around 15% of this level.

Additional sources of funding identified in the Plan which have not yet been employed include a surcharge on loads containing clean cardboard and a unit surcharge applied to the landfill operating fee to fund a Plan coordinator. It is recommended that these two methods be examined again for feasibility.

In addition, funding for upgrades and new initiatives can be derived from the following new sources: an increase in tax requisition, and increase in user fees for garbage collection and refuse

disposal sites, contributions from Product Stewards, partnership opportunities with municipalities, Gas Tax Fund, future Greenhouse Gas credits, Gwaii Trust and FCM funding.

## 11.0 How about the Haida?

Band Councils provide garbage collection service on their reserves using their own trucks, staff, cost recovery mechanisms, and service delivery protocols. Materials collected are then delivered to SQCRD facilities, namely the transfer station closest to the community. SQCRD also provides one set of community recycling bins and additional recycling opportunities at the transfer stations (see Figure 1).

Service agreements that set out funding contributions to the solid waste management system are in place for Old Massett and Skidegate Band Councils. The intention of these agreements is to ensure the Bands have access to necessary infrastructure to manage waste generated on reserves and that the Regional District can continue to provide this infrastructure through an equitable contribution to the costs. The same agreement has been in place since 1994, although the agreement is technically for a twelve month period ending December 31 of each year unless notice is given by either party of termination. The agreement also specifies that the terms will be reviewed each February to consider changes in refuse volume so that disposal fees can be adjusted accordingly.

The contribution to costs is based on population of each reserve relative to the entire Islands population plus regular system unit charges applied to commercial and institutional collection points that are provided a regular service by the Bands. These costs are adjusted to reflect each Band's share of expected revenues from tipping fees charged for the system in the current year. The population figures for Skidegate and Old Massett used to calculate contributions are 781 (16%) and 694 (14%) respectively for a total of 30%.<sup>6</sup> Band accounts are up to date for 2007, and based on these agreements a contribution of \$112 812.00 to the overall budget.

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<sup>6</sup> Population numbers and percentages vary depending on source.



The effectiveness of this arrangement in meeting the original Plan goals has not been acceptable, largely due to the following factors:

- Tipping fees and unit fees are too low and are overdue for a review
- Insufficient tracking of Band volumes at landfills
- Unauthorized use of transfer stations by private residents following collection trucks in on days when there is no attendant to collect fees
- Band garbage collection policies that favour customer service over waste reduction

Amendments to agreements are needed but should be made in the context of overall changes to the system - see Recommendations for specific suggestions. It should be noted that consultations have been limited to date but an openness is there for education and partnerships and both bands have been consistent with ISWAC. As well, an office recycling program was observed at the Skidegate Band office.

## 12.0 Making Amends with Bylaws

The Islands waste management system is governed by a set of bylaws that regulate fees and charges, service conditions, and the authority of the Islands Solid Waste Advisory Committee. Appendix F provides a brief summary of active bylaws and bylaw amendments (since 1994) and must be considered in communications related to future bylaw changes.

Given the current level of stress on the waste management system and the high degree of uncertainty regarding future financial and policy requirements, a bylaw review every two years is recommended. Table 8 provides suggestions for changes using the existing bylaw structure and based on the consultant's interpretation of servicing needs and opportunities until 2010. These suggestions should be considered in the context of the Conclusions and all recommendations.

**Table 8 - Proposed Bylaw Amendments**

BYLAW 276 SECTION	PROPOSAL	NOTES
Definitions	<p>1. May need to add “communal garbage bin”</p> <p>2. Update “garbage” - resources for which no viable recycling or composting opportunities exist.</p> <p>3. Update “marketable” - materials that can be recovered through local recycling collection programs or have approved local end markets as determined by ISWAC.</p> <p>4. Add to “prohibited wastes”: xiv - materials covered under the BC Recycling Regulation that have viable collection facilities on the islands and xv - marketable materials including organic matter that can be composted.</p> <p>5. Update “Recyclable Waste” to “Recyclable materials” means marketable, source separated resources that ...</p> <p>6. “Regulation Garbage Receptacle” - replace 30 kg with 22 kg.</p> <p>7. Update “unmarketable” - replace “disposed” with recovered.</p>	<p>Review need to include Drywall in definition of controlled wastes.</p> <p>Review definitions of oversize and large tires.</p>
Collection Service	<p>Remove active commercial establishments from (a).</p> <p>Amend c) collection shall be once weekly to c) collection schedule shall be once weekly except in the event of a pilot project whose objective is to increase efficiencies and maximize recovery of resources.</p> <p>Delete (f) (iii) and replace with the Village of Masset has agreed to exempt my property as I will not use the service for a continuous period not less than two months.</p>	<p>Section (b) previously deleted.</p>
Disposal	<p>None at this time.</p>	
Landfill and Transfer Station Operation	<p>None at this time.</p>	
Violation and Penalties	<p>Add under b) 3. Serve community service time at the discretion of the Solid Waste Coordinator equivalent to the monetary fine at a rate of \$10/hr.</p>	
Severance	<p>None at this time.</p>	
Date	<p>Allow time for public consultation - October 2008?</p>	

BYLAW 276 SECTION	PROPOSAL	NOTES
Title	To be determined by SQCRD.	
Schedule 1: Collection Service	<p>May need to amend 3. Condition of Garbage Receptacles to include communal garbage receptacles.”</p> <p>May need to amend 4. Appointment of Collector to allow for a five year contract with option to renew.</p> <p>May need to amend 9. Container Limits to allow for phasing in of a one bag limit in 5 years (2013).</p>	
Schedule 2: Collection Service Fees	<p>May need to delete second sentence in (a) if agreement to enforce two bag limit cannot be reached with Bands.</p> <p>Need to review (d) Basic Unit Fee formula and values to determine what collection fees should be for 2009. An increase is likely based on new and higher values for all variables in part B of formula.</p> <p>Need to review (e) additional fees based on values used in above formula. May also wish to introduce a recycling bag tag fee set at 50% of garbage bag fee if curbside service is offered.</p> <p>Review penalty for late payment of fees.</p>	<p>Band Councils are to pay standard monthly charge on behalf of residences on an Indian Reservation. Bag limits must be enforced if charges are to be on par with non-Reservation residences. An updated customer list is needed.</p>
Schedule 3: Tipping Fees	<p>Suggest introducing a tipping fee surcharge of 10% or an annual increase of 10% on all fees and charges for capital improvements and closure costs.</p>	<p>Review Recycling Fund structure and strength to ensure storage fees are sufficient. Account for impact of BC Recycling Regulation.</p>
Schedule 4: Site Regulations	<p>Add to 1. (d) is not authorized to enter i.e. is following collection trucks into site during closed hours. Add to “may be excluded from site” and/or charged under Section Five of Bylaw 276.</p>	<p>Covered load requirement not being re-spected or enforced.</p>

## 13.0 A Vision for Islands Waste Management

**Start by adopting Zero Waste as the vision.** Set interim targets of 40% by 2012 and 70% diversion by 2015. Referring back to our waste characterization, we know that at least 20% of materials are organic (easily diverted) and 25% are paper (easily diverted). An additional 15% minimum can be diverted through improved EPR programs and another 10% through Reduce and Reuse programming.

**Current best practices for sustainable communities are to provide convenient access to collection services for recycling, organics and residuals** (e.g. Ladysmith, BC has a garbage limit of one container every other week, and offers curbside recycling every other week and organics collection every week). In higher density areas and especially where curbside garbage collection service is already provided, a common scenario for efficient collection is to use split-packer trucks and move to a three stream collection service. Service frequency is bi-monthly for garbage and recycling and weekly for organics as follows: Week 1 - garbage, organics, Week 2 - recycling, organics. If collection service continues to be contracted out, it is recommended that all three streams be done by the same contractor. Services in Skidegate and Old Massett must be identical to maximize efficiency and meet waste reduction targets. A depot system for low-density and hard to access homes will be needed.

**A composting system for food wastes will be needed.** The system needs to be operational in advance of a full 3-stream service and a pilot project is recommended. A simple covered, aerated windrow system may be a good choice for the Islands. The cost of collection, odour management, and end markets are the three key factors to success. It is possible to have two sites, south and north to reduce collection costs although finding a large enough site with sufficient buffer from neighbours may be problematic. Alternatively, smaller in-vessel systems with excellent odour control could be used as they require less space, however during receiving times odours may be an issue. An organics management strategy that identifies the best solution for the Islands should be developed; a 5 year business plan format is highly recommended. Funding from FCM can be used for this purpose - apply by March 27, 2008. A joint application with RDKS may be possible.

**Future garbage collection contracts should be structured to offer the flexibility of a three-stream system.** Expect a 3 year implementation period from the date the organics management strategy contract is awarded to the date when facilities will be ready to receive material.

#### **KEY CONCEPT**

**Zero Waste:** A guiding principle that promotes the recycling of all materials back into nature or the marketplace in a manner that protects human health and the environment;

Alternative definition: "Zero Waste is a goal that is both pragmatic and visionary, to guide people to emulate sustainable natural cycles, where all discarded materials are resources for others to use. Zero Waste means designing and managing products and processes to reduce the volume and toxicity of waste and materials, conserve and recover all resources, and not burn or bury them. Implementing Zero Waste will eliminate all discharges to land, water or air that may be a threat to planetary, human, animal or plant health."

## 14.0 Conclusions

1. Leadership and capacity challenges to implement and monitor the Plan have resulted in a jigsaw puzzle of eroding system components and administrative dysfunction. An Implementation team is needed with a local presence and should at minimum include a full-time Supervisor and a 0.5FTE Zero Waste Educator. Work with other Regional Districts to develop winning job descriptions and compensation packages.
2. The Zero Waste Vision would be welcomed by many stakeholders but further and more inclusive public consultation is required before making any big changes.
3. Failure to alter the current course of waste management will have profound impacts on the cultural, ecological, and economic character of Haida Gwaii. Service Agreements with Band Councils should be used as a tool, along with this report and a clear financial analysis to move towards full participation by the Haida in the future Islands waste management system, including appropriate cost contributions.
4. Using a community-based social marketing approach as an alternative to information-intensive campaigns is required to make lasting behaviour changes for a more sustainable Haida Gwaii.
5. Financing the closure of the existing landfill (expected to be full by 2044) must remain a financial priority, on par with financing alternatives to landfill. Funding partners for development and implementation of a full sustainability plan should be sought in the next 12 months.
6. There may be an over-emphasis on recycling in the minds of the public as the solution to waste management challenges on the Islands. An assessment of on-island end markets for paper and glass should be completed and viable solutions pursued, however, reduced consumption and smart consumer choices must be established as the best solution.

## 15.0 Summary of Recommendations

Recommendations have been grouped into immediate (next 6 months) and short to mid-term (next five years). Within each grouping, recommendations have been further divided into “hard” initiatives involving the capital purchase of equipment and construction of infrastructure and “soft” initiatives that are more planning, education and promotion, and corporate management related.

The original organization of system components presented in the 1994 Islands Solid Waste Management Plan (the Plan) has been duplicated here to facilitate comparison with the original initiatives and a formal Plan review at a later date. Each category in the Plan comes with its own goal, set of objectives (20 in total) and corresponding policies (82 in total). Without an amendment to the Plan, existing policies must be followed. These recommendations should be cross-referenced with all policies adopted in 1994 before implementation.

### For immediate implementation

\$ new expenditure under \$10K

\$\$ new expenditure between \$10K and \$100K

\$\$\$ new expenditure over \$100K

H = “hard” requiring capital costs

IMMEDIATE RECOMMENDATIONS
<i>General and Implementation</i>
1. Distribute copies of Island Waste Management Plan - Stage 3 Implementation to all municipalities.  2. RD Board and Village Councils to adopt new waste reduction target and take the 2 bags or less pledge.  3. Create job description for a full-time Islands Plan Implementation Coordinator/Supervisor (Policy I10.4.2) and a full-time Zero Waste Educator.  4. Hire Coordinator ASAP.\$\$
<i>Administration</i>

## IMMEDIATE RECOMMENDATIONS

4. Review service agreements with Old Massett and Skidegate Band Councils.
5. Review and amend all bylaws related to Islands Solid Waste Management to align with goals, objectives and policies of Islands Solid Waste Management Plan and accepted recommendations of the 2007 Solid Waste Management System Review.
6. ISWAC to hold strategic planning and organizational effectiveness workshop. Hire a professional facilitator to lead this one day event. Objectives will include developing a new terms of reference and succession planning.\$

### *Landfill*

7. Upgrade landfill office by landscaping to reduce mud and enclosing staff lunch room.\$H
8. Use volume to weight conversion charts.
9. Request that all haulers make weekly deposits and write cheques instead of giving cash.
10. Conduct a litter cleanup along the fence line and access road monthly. Diverting materials such as paper and plastic bags will reduce litter problem.
11. Carry out a detailed comparison of costs and benefits of landfill administration options. \$

### *Collection Service*



## IMMEDIATE RECOMMENDATIONS

11. Update Collection List to include all occupied and active collection units by route. Landfill clerk to drive routes with contractors to provide an accurate count of commercial versus residential.
12. Remove commercial properties from collection service - privatize services.
13. Transfer administration of municipal collection service to municipalities who will make decisions regarding Opting Out, commercial services, communal bins, and tag sale system.
14. Introduce change in collection schedule requested by QCI and use as opportunity to educate residents on other changes to system.
15. Monthly fees to reflect cost of collection service - basic route plus per bag cost plus tipping fees and administration fee.
16. RD to maintain contracts for rural residents and remove option for opting out; five year contract
17. Develop new contract for garbage collection service with a five year term to be used as a template for all administrators. Service to be based on using split packer trucks to allow for eventual service of weekly organics pickup and every other week garbage pickup. Every other week recycling service can also be factored in.
18. Retain weekly service and two bag limit, phasing down to one bag limit in two years and every other week service in five years. (weekly service specified in Plan)
19. Change container size to 22 kg (50 lbs).
20. Redesign garbage tags so that they are numbered and haulers can retain half of the tag for reimbursement purposes.
21. Redesign the "rejected garbage" tags to be white with red text with the following reasons:  
1. TOO HEAVY 2. NOT IN PROPER CONTAINER 3. CONTAINS UNSAFE OR PROHIBITED MATERIALS.
22. Consult with garbage container retail outlets to ensure regulation size containers are available and post sign with information for residents.

### *Transfer Stations*

## IMMEDIATE RECOMMENDATIONS

23. Align Skidegate and Masset transfer station hours with collection schedules of Skidegate and Old Massett Bands. For example, Skidegate can be open Mondays, Fridays, and Saturdays from 12 to 5 pm. \$

24. Provide a lockable and dedicated bin for Skidegate and Old Massett bands to track band volumes. \$H

25. More detailed financial analysis needed to determine correct user fees but can start by increasing Transfer Station fees by 20% to cover cost of haulage. E.g. Dump truck load currently \$50 - increase to \$60. \$

### *Haulage (from transfer stations to landfill)*

26. RD to continue providing haulage service; revise haulage schedule to reflect new opening hours of transfer stations, collection schedules and new landfill hours.

### *Reduction Policies*

27. Introduce differential tipping fees to encourage source separation, waste reduction and recycling. I.E. Mixed waste \$55, Paperless loads \$45.

### *Education*

28. SQCRD Website upgrade with new waste management content. \$

29. Distribute library waste reduction packages including Story of Stuff video.

30. Work with Observer and independent publications to print recycling and zero waste information.

### *Composting*

31. Provide web-based and print education on composting and grass mulching.

32. Promote BC Recycling Hotline for composting and recycling questions.

### *Recycling*

## IMMEDIATE RECOMMENDATIONS

33. Evaluate EPR programs based on Footprint/RDKS template.
34. Organize an electronics round-up on Island.\$
35. Develop glass recycling pilot project in Village of Queen Charlotte City with Encorp.\$
36. Add on four hours each opening day of Queen Charlotte Recycling depot - currently open Wednesday and Saturday from 10 am to 2 pm; suggest changing hours to 10 am to 6 pm on both days.\$

## Short-term - next five years

### SHORT-TERM RECOMMENDATIONS

#### *General*

37. Consult public to amend and update Islands Solid Waste Management Plan. Use a triple bottom line approach for evaluating options before committing to implementation.
38. Conduct a waste composition study in partnership with Product Stewards.\$
39. Use the waste management system review exercise as a starting point for developing an Integrated Community Sustainability Plan (ICSP). \$
40. Build a Centre for Sustainability to demonstrate sustainable building design, house administrative staff and replace the existing recycling depot in the Village of Queen Charlotte. Look into feasibility of building this on a reclaimed contaminated site (i.e. former landfill).\$\$H

#### *Administration*

## SHORT-TERM RECOMMENDATIONS

41. All local governments to adopt and implement sustainable purchasing policies.
42. Conduct annual reviews of system complete with reliable data on landfill and recycling volumes.
43. Islands to have an annual budget for Plan implementation for all initiatives outside of curbside collection. These fees to be collected through taxation by SQCRD.
44. Provide staff training on time management.

### *ISWAC*

46. ISWAC to hold three outreach events per years: 1. AGM to report on successes / failures and gather feedback from stakeholders on performance and workplan priorities. 2. Capacity building workshop once per year for staff and contractors. 3. Partner to host a Sustainability workshop to review current and best practices.
47. New Plan coordinator to chair meetings and produce annual reports.
48. ISWAC to have annual retreat to finalize workplan and budget after AGM.

### *Landfill*

49. Use volume to weight conversion charts.
50. Request that all haulers make weekly deposits and write cheques instead of giving cash.
51. Conduct a litter cleanup along the fence line and access road monthly. Diverting materials such as paper and plastic bags will reduce litter problem.
52. Install a Re-use Shed.\$H
53. Evaluate costs and benefits of weight scales for transfer stations.
54. Install signs at landfill with clear directions on sorting.\$H
55. Repair and maintain electric fence.

### *Collection Service*

## SHORT-TERM RECOMMENDATIONS

56. Develop pilot project implementation plan for the Village of Queen Charlotte City on Oceanview Drive. The pilot would test the use of split packer trucks without organics collection for now but would include a one bag limit combined with every other week paper product recycling service for a six month period. Paper products include cardboard, newspaper, office paper etc and are estimated to be the largest portion of the waste stream at 25%, approximately 850 metric tonnes. Piloting the 3 stream system should also be done. \$\$

57. Review results of pilot program, revise and expand.

58. Introduce Reward program for residents with two bag or less. One winner per community each month. \$10 gift certificate from local retailer.

59. Develop form letters to send to "repeat offenders" advising them of bylaw requirements and the consequences of non-compliance to the overall Islands waste management system.

### *Transfer Stations*

60. Sandspit Transfer Station - clean up and close site. Relocate to higher profile location. \$\$H

61. Skidegate - change hours on Wednesday to 3 pm to 7 pm.

62. Install a Re-use Shed at all locations. \$\$H

63. Provide proper staff shelters. \$\$H

64. Skidegate - Grade road and trim trees and bushes along road and around site.

### *Haulage*

65. Cost out compactor bins and evaluate benefits of switching over.

### *Reduction Policies*

66. Decrease bag limit to one in two years (or when recycling is easier).

67. Use Spring Clean-ups as an opportunity to focus on recycling and composting. Do not pick up regular household garbage - bulky goods only.

### *Education*

SHORT-TERM RECOMMENDATIONS

- 68. Implement Policy I7.1.1 re: Islands Eco-ed Coordinator to organize programs for schools, local government and other interested groups.
- 69. Adapt and implement a community-based social marketing outreach strategy (see RDKB Zero Waste strategy).
- 70. Introduce aggressive anti-illegal dumping campaign.
- 71. Introduce anti-garbage burning campaign.
- 72. Work with retailers to highlight products that make less garbage as part of a Sustainable Shopper program.
- 73. Develop a Sustainable Tourism and Green Events program.
- 74. Install billboards on sides of all collection trucks. A contest could be held to design the billboards.\$H

*Composting*

- 75. Develop and implement Organics Diversion Strategy including food waste composting.\$

*Recycling*

## SHORT-TERM RECOMMENDATIONS

76. Develop and implement an Islands EPR Transition Strategy in consultation with RCBC and Product Stewards. Calculate impact on budgets based on agreement.
77. Confirm volume estimates for fibre products - in 2007, 111.6 tonnes were collected and shipped for recycling. An additional 850 MT may also be recoverable from the waste stream.
78. Implement a ban on all paper products once a sustainable landfilling alternative is in place.
79. Build partnerships to increase accessibility to recycling (i.e. Tow Hill community).
80. Replace recycling bins to increase capacity and facilitate both drop-offs and pick-ups.\$H
81. Relocate recycling depot in Village of Queen Charlotte City by 2010. \$H
82. Investigate opportunity for larger recycling centre in Masset and provision of curbside service for paper products.
83. Install glass crusher in partnership with Encorp.\$H
84. Investigate options for on-islands fibre recycling to eliminate need to ship to Prince Rupert. For example, a mini-paper recycling plant can produce paper products and create local employment. See: <http://www.dainet.org/livelihoods/paper.htm>

# Appendices



## Appendix A - Public Consultation Summary

A Communications strategy was developed and submitted in July 2007. The strategy addressed consultation with major stakeholders on the following project components:

- evaluate the existing system
- identify future servicing needs and opportunities
- Identify and evaluate potential options to address needs and opportunities

Table A-1 below summarizes consultation and communication activities leading to this report. A summary of stakeholder comments during each phase of the review has been previously submitted separately as the following reports:

1. Municipal Consultations - October 18 and 19, 2007.
2. History of Contracts and Agreements
3. Garbage Collection Service Meetings - January 2008

Table A-1: Summary of Consultation Activities by Stakeholder

<p>Islands Solid Waste Advisory Committee</p> <ul style="list-style-type: none"> <li>● July 2007 - project overview and approval of Communications strategy</li> <li>● August 2007 - contract analysis report, results of facility review and contractor consultations</li> <li>● September 2007 (by conference call) - review of FCM Sustainable communities approach focusing on evaluation,</li> <li>● October 2007 - results of municipal consultations</li> <li>● November 2007 - review of landfill issues with Tony Sperling</li> <li>● January 2008 - review of garbage collection contracts and newsletter</li> </ul>
<p>SQCRD Board of Directors</p> <ul style="list-style-type: none"> <li>● October 2007 in Masset - results of municipal consultations and recommendations for garbage collection contracts</li> <li>● November 2007 in Prince Rupert - review of FCM approach, new waste reduction target and zero waste, initial recommendations by system component</li> <li>● unable to attend January 2007 meeting due to flight cancellation</li> </ul>

<p><b>Contractors</b></p> <ul style="list-style-type: none"> <li>• met with garbage collection contractors - Big Red and QCI Disposal in July 2007</li> <li>• second meeting in January 2007 to review existing and future garbage collection service</li> <li>• met with transfer station operators in July 2007</li> </ul>
<p><b>SQCRD staff</b></p> <ul style="list-style-type: none"> <li>• met with landfill and recycling staff each time on island</li> <li>• John Holland and Tim Des Champ present at almost every meeting and additional communications held via phone and e-mail</li> </ul>
<p><b>Municipalities</b></p> <ul style="list-style-type: none"> <li>• Letter of introduction in August 2007</li> <li>• Two rounds of consultations - October 2007 and January 2008</li> <li>• Moresby Island Management Committee November 2008</li> </ul>
<p><b>First Nations</b></p> <ul style="list-style-type: none"> <li>• Letter of introduction in August 2007</li> <li>• Bands are represented on ISWAC</li> <li>• Phone conversation with Bab Stevens, Manager for Skidegate Band in October 2007 and dropped by office in January 2008 and spoke with front desk staff to confirm garbage collection schedule, community outreach, recycling programs, and distribution of newsletter</li> <li>• Informal meeting with Jason Major, Manager for Old Massett Band in November 2007</li> </ul>
<p><b>Media and General Public</b></p> <ul style="list-style-type: none"> <li>• Press release in August 2007</li> <li>• Media interviews in October 2007 and January 2008</li> <li>• Sierra Club via conference call in September 2007 and ongoing e-mails</li> <li>• Haida Gwaii Recycling Newsletter distributed January 2008</li> <li>• random conversations with members of the public and business owners during each visit on the Islands</li> <li>• phone calls and e-mails to Footprint office from residents of Village of Queen Charlotte City</li> </ul>
<p><b>Ministry of Environment</b></p> <ul style="list-style-type: none"> <li>• ongoing communications with Eric Pierce, Skeena Region regarding project status and MOE priorities regarding residual disposal facility operational certificates.</li> </ul>

## Appendix B - Recycling Volumes by Commodity

<b>ISWAC Recycling Totals 1996-2007 (in metric tonnes)</b>													
<b>PRODUCT</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>TOTAL</b>
Cardboard	14.27	22.3	20.2	27.6	28.5	27.5	43.1	50.5	55.5	57.3	50.5	70.6	468.0
Newsprint	2.6	4.0	3.9	5.3	5.1	4.7	4.7	4.6	5.8	5.7	4.5	6.6	57.4
Magazines	2.7	5.6	5.1	10.0	8.8	8.3	13.5	11.2	15.3	14.1	14.4	13.8	122.7
Office pack*	4.0	4.5	3.5	6.0	6.3	6.7	9.9	7.7	9.1	8.8	3.9	0.0	70.4
Mixed paper	0.7	1.2	0.9	1.4	1.5	2.3	3.4	3.0	3.0	3.7	12.1	20.7	54.0
Hard cover books	0.0	0.0	0.0	0.5	0.0	1.3	4.0	1.2	0.9	1.5	1.4	0.8	11.6
Plastic	0.1	0.2	0.2	0.4	0.4	0.5	1.0	1.5	1.4	1.6	1.8	2.3	11.5
Tin cans	0.0	0.0	0.0	2.0	1.9	1.6	2.2	2.2	2.3	2.6	2.7	2.6	20.1
Phone books	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.5	0.2	0.0	1.0
Non Ferrous Meta	0.0	0.0	1.1	2.7	2.2	0.0	0.2	2.2	0.0	0.0	0.0	0.0	8.5
Paint	0.7	2.4	1.6	1.2	3.7	1.1	1.0	0.3	0.9	0.7	1.6	0.5	15.7
Lead-acid batterie	14.2	23.3	21.2	0.0	18.0	25.9	17.7	9.7	18.6	17.1	28.7	47.7	242.0
Dry cell batteries	0.0	0.0	0.5	18.4	16.7	0.1	0.1	0.0	0.2	0.0	1.0	0.4	37.4
Tires	0.0	0	0.0	0.0	63.6	43.5	35.1	19.3	11.4	46.5	40.6	14.2	274.2
<b>TOTAL TO DATE*</b>	<b>39.3</b>	<b>63.5</b>	<b>58.3</b>	<b>75.6</b>	<b>156.9</b>	<b>123.6</b>	<b>136.1</b>	<b>113.4</b>	<b>124.1</b>	<b>160.1</b>	<b>163.3</b>	<b>180.1</b>	<b>1394.4</b>
<b>Notes:</b>													
*Office pack includes white ledger, coloured ledger and shredded paper. Categories changed to Office Pa													
**Non ferrous metal includes aluminum beverage containers in 1996 and 1997.													
***In 2001, there was a shipment of textiles weighing 6676 kg. The total for this year does not include this													

## Appendix C- Commercial units

Contractors	40
Credit Union	2
Fisheries	11
Forestry	21
Hospitals	2
Hotels/Motels	15
Lodges/B &B	19
Restaurants	25
Retail	65
Grocery	11
Schools	8
Services (most of these are probably small though does include automobile repair)	78
Service Stations	5
Transportation	18
<b>TOTAL</b>	<b>320</b>

## Appendix D - Five Year Financial Plan

Skeena-Queen Charlotte Regional District						
Five Year Financial Plan						
Exhibit 12 - Islands Waste Management						
	2006	2007	2008	2009	2010	2011
	Actual	Annual	Budget	Budget	Budget	Budget
<b>Revenue</b>						
Grant in Lieu	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800
Requisition	\$50,000	\$75,000	\$50,000	\$50,000	\$50,000	\$50,000
Special Waste Revenue	\$2,820	\$2,820	\$2,000	\$2,000	\$2,000	\$2,000
Tipping Fees	\$40,042	\$45,000	\$70,000	\$70,000	\$70,000	\$70,000
Recycling Revenue	\$15,711	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
Skidegate IR Share	\$48,556	\$49,000	\$49,500	\$49,500	\$49,500	\$49,500
Masset IR Share	\$47,100	\$47,000	\$47,000	\$47,000	\$47,000	\$47,000
User Revenue	\$361,972	\$362,000	\$350,000	\$350,000	\$350,000	\$350,000
<b>Contribution from Capital</b>						
Other Revenue	\$4,622	\$6,346	\$7,000	\$7,000	\$7,000	\$7,000
Opening Surplus	(\$6,945)	(\$32,935)				
<b>TOTAL</b>	<b>\$565,678</b>	<b>\$576,031</b>	<b>\$597,300</b>	<b>\$597,300</b>	<b>\$597,300</b>	<b>\$597,300</b>
<b>Expenditures</b>						
Administration	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000
Debenture Payment	\$21,333	\$21,333	\$35,333	\$35,333	\$35,333	\$35,333
Landfill Operation/Maint	\$31,394	\$31,394	\$40,000	\$40,000	\$40,000	\$40,000
Collection	\$148,392	\$148,392	\$150,000	\$150,000	\$150,000	\$150,000
Haulage	\$58,729	\$58,729	\$40,000	\$40,000	\$40,000	\$40,000
Transfer Stations	\$4,139	\$4,139	\$42,000	\$42,000	\$42,000	\$42,000
ISWAC Administration	\$13,408	\$13,408	\$15,500	\$15,500	\$15,500	\$15,500
Wages & Overhead	199,660	200,000	\$176,000	\$176,000	\$176,000	\$176,000
Recycling/Composting	\$36,847	\$37,000	\$36,000	\$36,000	\$36,000	\$36,000
Insurance	\$2,603	\$2,600	\$2,240	\$2,240	\$2,240	\$2,240
Hardship Relief	\$2,035	\$2,035	\$4,000	\$4,000	\$4,000	\$4,000
Monitoring/Consulting/misc	\$48,072	\$-	\$4,227	\$4,227	\$4,227	\$4,227
Closure/Equipment Reserve		\$25,000	\$20,000	\$20,000	\$20,000	\$20,000
<b>Capital Expenditure</b>						
Closing Deficit/surplus	(\$32,935)					
<b>TOTAL</b>	<b>\$565,678</b>	<b>\$576,031</b>	<b>\$597,300</b>	<b>\$597,300</b>	<b>\$597,300</b>	<b>\$597,300</b>

## Appendix E - Action on Product Stewardship

### SQCRD Scoring on Local Government Actions

This completed evaluation is to be used as a discussion tool for the SQCRD and the appropriate agencies to address concerns and opportunities for moving forward. The RD critique goes through each task, with an emphasis on identifying gaps between the existing situation and the ideal situation. Evaluation of shared responsibilities and product steward responsibilities needs further definition and it is recommended that BC Ministry of Environment help facilitate a solution.

<i>Responsibility</i>	<i>Status</i>
All staff and elected officials have been provided with information on products covered under BC Recycling Regulation and local facilities and how EPR programs dovetail with RSWMP.	Recycling News Jan/Feb 08 plus this report will be distributed by January 31. New information will be added to SQCRD website.  Recommendation: Follow up with staff and elected officials once to twice per year via meetings, memos and e-mails.
Include a transition strategy for 100% EPR in RSWMP and adopt the 100% EPR by 2020 as a guiding principle in all sustainable community plans.	SWMP is overdue for a review but transition strategy is being considered as part of the Waste Management System Review.
Catalogue of opportunities for stewards to engage in community relations has been provided to each steward.	Needs to be completed – target date March 31.
Planning for variations in products and volumes collected under existing and future garbage and recycling services.	Started through System Review report.  Recommendation: memo to local haulers and local governments responsible for garbage and recycling collection regarding planning for volume and composition fluctuations.
Establish and maintain standards of cleanliness and service at RD owned facilities that collect EPR materials.	Will be considered along with all recommendations in System Review report.
Provide sufficient landbase with appropriate zoning for product collection depots in OCPs and give a map of zones available.	Will be considered along with all recommendations in System Review report.

Provision of temporary sites or assistance in finding sites (compensation provided by stewards) not to exceed 3-6 months with transition period.	Electronics program needed.  Can Eric Pierce and Jennifer Wilson help facilitate these type of solutions as part of BCRR roll-out?
Provide incentives for local infrastructure, particularly end market development for products not yet covered by regulation and for organics.	Investigate option of diversion credits to provide a per tonne dollar value. For products not included in EPR programs, partner with Encorp or someone else. Example of glass - RD can purchase glass crusher with contributions by Encorp.
Implement landfill bans on materials that have adequate disposal alternatives	No bans currently in place – alternatives not yet adequate. Will be considered along with all recommendations in System Review report.
Implement purchasing policies that favour suppliers who provide end-of-life management for their products	No policies in place. Will be considered along with all recommendations in System Review report.
Contribute 50% of the staff salary consumed by EPR transition strategy related activities.	Currently contributing consulting fees to develop and assess programs as part of System Review as well as a portion of Waste Management Superintendent's time and Islands Landfill staff time.
Participate in an annual opportunity to sit and talk with product stewards for the purpose of evaluating and finetuning the transition strategy.	Waste Management Superintendent and consultant participate in BC PSC, and met with stewards at CWRE to explore other opportunities.

## Appendix F - Chronology of Islands Waste Management Bylaws

BYLAW & DATE	REFUSE DISPOSAL, TEMPORARY STORAGE, CONTROLLED WASTES	ADMINISTRATIVE FUNCTION
Bylaw 468  March 2005	General refuse - Small Loads \$13.00  General refuse - Commercial Collection \$12.00 m3  White Goods \$8  ODS White Goods \$25  Oversize tires \$9  Oversize tires w. rims \$21  Tires <16" w. rim \$12  Tires <16" no rim \$2  Lead Acid Batteries \$3 (transfer stations)	Increase fees, in most cases by \$1 except for ODS white goods which had a \$5 increase.
Bylaw 466  Dec 2004		Delete Section 2: Collection Service 1.b) from Bylaw 276 (service option for Parks Canada, BC parks and Min. of Transportation)
Bylaw 451  Jan 2004		Mainland Solid Waste Management regulation, fees and charges.
Bylaw 435  Dec 2002	Asbestos \$60 m3  Contaminated Soils, Bulky waste, Food Processing Waste \$24 m3  Septage \$50 per truck load	Drywall deleted from definition of controlled waste.
Bylaw 415  August 2001	Asbestos \$60 m3  Contaminated Soils, Drywall, Bulky waste, Food Processing Waste \$24 m3  Septage \$50 per truck load  <b>Basic Unit Collection Fee \$17</b>	Drywall added to definition of controlled waste.  Reduce garbage collection fee.



BYLAW & DATE	REFUSE DISPOSAL, TEMPORARY STORAGE, CONTROLLED WASTES	ADMINISTRATIVE FUNCTION
Bylaw 402 August 2000	Tires <16" w. rim \$11 Tires <16" no rim \$1	Appointment of collector - three year period with option to renew for additional 1 or 2 yrs;  Late payment fees 4.5%
Bylaw 351 May 1998	ODS White Goods \$20  General refuse - Dump Truck Loads per axle \$70  Loads containing unwaxed cardboard up to \$20 m3  Demolition, landclearing, yard and garden waste Dump Truck load per axle \$35	Oversize tires definition to: 16" to 20"  Controlled wastes - Large Tires definition to: greater than 20"  Delete Empty Drums or tanks \$20 m3 (\$5 per 45 gallon barrel) from general refuse and ADD to Temporary Storage Fees: Clean Empty Drums or tanks \$20 m3 (\$5 per 45 gallon barrel or 20 lb propane tank)  Establish cardboard surcharge as per the Plan.
Bylaw 345 January 1998	<b>Basic Unit Collection Fee \$18</b>	Reduce garbage collection fee.
Bylaw 333 May 1997	ODS White Goods \$12  Stripped Vehicle Hulks \$20	Increase ODS fee  Decrease vehicle hulk fee.
Bylaw 317 June 1996	General refuse - Small Loads \$12.00  General refuse - Dump Truck Loads per axle \$60  Demolition, landclearing, yard and garden waste: Small Load (demolition) \$6 Dump Truck load per axle \$16  Oversize tires \$8  Controlled wastes: Large tires \$8 Contaminated Soil \$24	Definition - oversize tires add 16"-24" radius  Controlled wastes - Large Tires definition to: greater than 24"

BYLAW & DATE	REFUSE DISPOSAL, TEMPORARY STORAGE, CONTROLLED WASTES	ADMINISTRATIVE FUNCTION
Bylaw 308  February 1996	Misc. Metal Goods and Small Appliances \$5 /small load or \$2 each  <b>Basic Unit Collection Fee \$19</b>	Reduce garbage collection fee.  Decrease late payment fees to 3% from 5%  Large loads not to be dumped at Masset Transfer Station and only with permission at Skidegate and Sandspit Transfer Station. Double charge will apply to loads delivered without prior permission.
Bylaw 276  January 1995	General refuse - Small Loads \$10.00  General refuse - Dump Truck Loads per axle \$50  Demolition, landclearing, yard and garden waste: Small Load (demolition) \$5 Dump Truck load per axle \$13  Oversize tires \$4  Controlled wastes: Large tires \$4 Contaminated Soil \$20  <b>Basic Unit Collection Fee \$20; Bag Tags \$2</b>	Establishes the rates, terms, and conditions under which waste management services are provided on the Islands.  Establishes all definitions.
Bylaw 271  1994		Authorizes Board to regulate the collection , storage, removal and disposal of waste and the levying of user fees and other charges.
Bylaw 265  Oct 1994		Establishes the Islands Solid Waste Management Committee to administer and implement the Islands Plan.

